



PLUGGING AND ABANDONMENT PLAN

NAME AND ADDRESS OF FACILITY

EAST POPLAR UNIT 8-D

NAME AND ADDRESS OF OPERATOR

Murphy Oil USA, Inc.
200 Peach Street
El Dorado, AR 71730LOCATE WELL AND OUTLINE UNIT ON
SECTION PLAT — 640 ACRESSTATE
MT

COUNTY

Roosevelt

PERMIT NUMBER

SURFACE LOCATION DESCRIPTION

1/4 OF NW 1/4 OF SE 1/4 SECTION 10 TOWNSHIP 28N RANGE 51E

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT

Surface
Location 1980 ft. from (N/S) S Line of quarter section
and 1980 ft. from (E/W) E Line of quarter section

TYPE OF AUTHORIZATION

- ☒
- Individual Permit
-
- ☐
- Area Permit
-
- ☐
- Rule

Number of Wells 1

WELL ACTIVITY

- ☐
- CLASS I
-
- ☐
- CLASS II
-
- ☒
- Brine Disposal
-
- ☐
- Enhanced Recovery
-
- ☐
- Hydrocarbon Storage
-
- ☐
- CLASS III

Lease Name EPU

Well Number 8-D

CASING AND TUBING RECORD AFTER PLUGGING

METHOD OF EMPLACEMENT OF CEMENT PLUGS

- ☐
- The Balance Method
-
- ☒
- The Dump Sailer Method
-
- ☐
- The Two-Plug Method
-
- ☐
- Other

SIZE	WT(LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
13 3/8"	48#	1	94' approx	17 1/4
9 5/8	36#		954.47'	12 1/4
5 1/2	15.5		5759.65'	8 3/4

CEMENTING TO PLUG AND ABANDON DATA:

	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Size of Hole or Pipe in which Plug Will Be Placed (inches)	5 1/2	5 1/2	**9 5/8				
Depth to Bottom of Tubing or Drill Pipe (ft.)	780'						
Sacks of Cement To Be Used (each plug)	2	10	10				
Slurry Volume To Be Pumped (cu. ft.)	2	10	10				
Calculated Top of Plug (ft.)	765' OK	10'	10'				
Measured Top of Plug (if tagged ft.)							
Slurry Wt. (Lb./Gal.)							
Type Cement or Other Material (Class III)	annular						

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (If any)

From	To	From	To
830	880		

Estimated Cost to Plug Wells \$ 15,000

*Cast iron BP will be set at 780' with 2 sacks of cement on top. Casing will be cut off 6' below ground on a plate welded on top.

**10 Sks. Cement will be pumped down 5 1/2" casing annulus

CERTIFICATION

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref: 40 CFR 144.32)

NAME AND OFFICIAL TITLE (Please type or print)

GLENN M. FEDDERSON

Vice President

Deal	
Form	

SIGNATURE

DATE SIGNED

12/4/84

PA
Plan
84

EPU 8-D

A. Area of Review

Fixed Radius of $\frac{1}{2}$ mile - Field Plat attached.
No wells within the area of review

E. Name and Depth of USDWs (Class II)

<u>Depth</u>	<u>Name</u>	<u>Local Name</u>
100'±	Tertiary	Unknown

G. Geological Data

<u>ZONE</u>	<u>NAME</u>	<u>DESCRIPTION</u>	<u>DEPTH</u>	<u>THICKNESS</u>	<u>FRAC PRESSURE</u>
Upper Confining	Bear Paw	Gray Shale	250'±	500'±	Unknown
Injection	Judith River	V. Lt. Gray, fine to medium grained, Calcareous, glauconitic sandstone	750'±	200'±	1 psi/foot
Lower Confining	Clagget & Eagle Shale	Gray Shale	950'±	1150'±	Unknown

H. Operating Data

- (1) Average Injection Volume - 7100 Bbls/Day
Maximum Injection Volume - 8400 Bbls/Day
- (2) Average Injection Pressure - 650 psi
Maximum Injection Pressure - 700 psi
- (3) Annulus Fluid - Corrosion Inhibited Fluid
- (5) Source of Injection Fluid - Mississippian Formation Fluid Produced from the East Poplar Field. (See Attached Analysis
- (6) SWD Station No. 4 operates with 2 pumps. One pump operates approximately 24 hrs/Day and the other pump operates approximately 10 hrs/Day.

M. Schematic Attached

Q. Plugging and Abandonment Plan

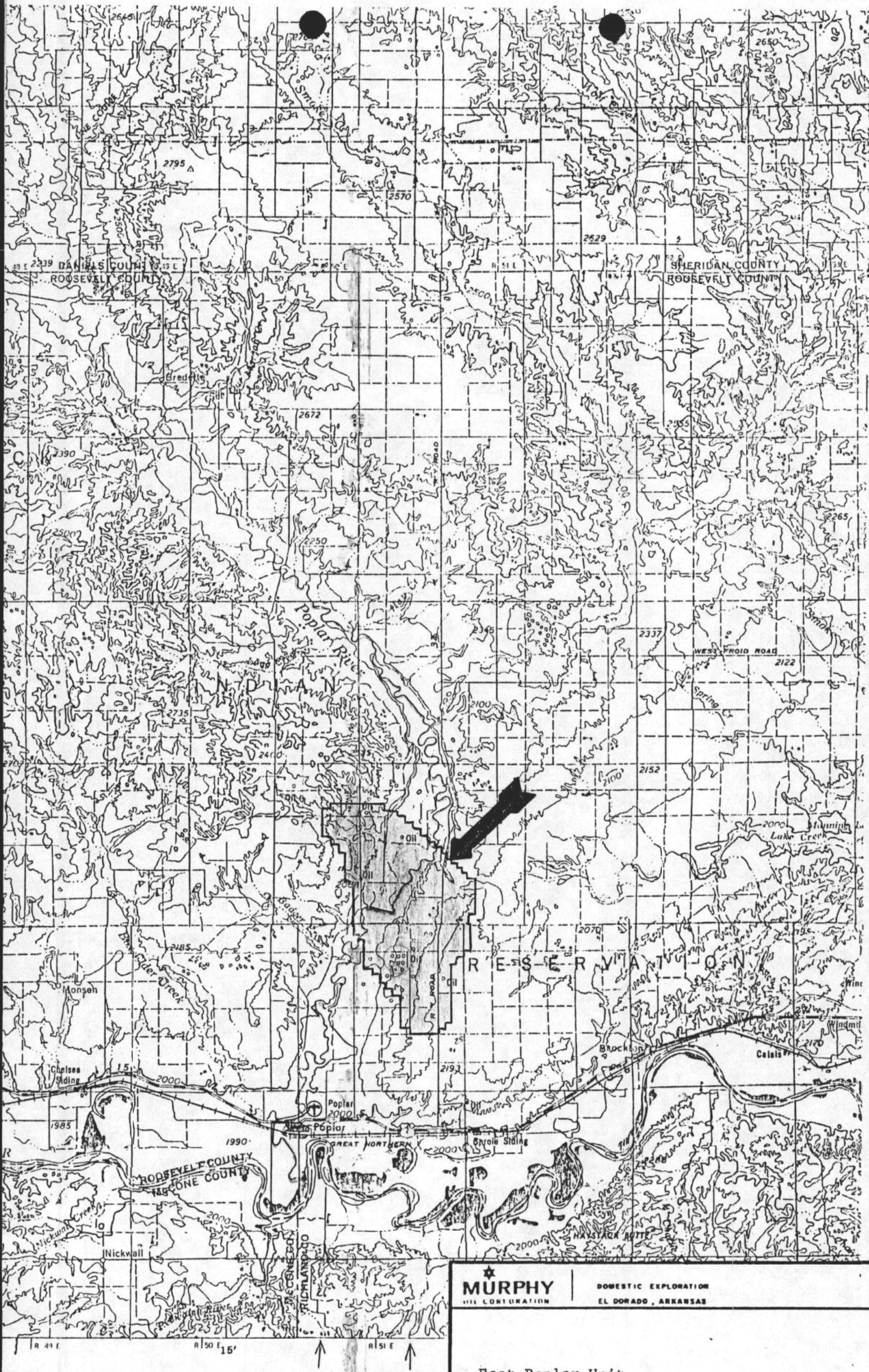
See Attached Financial Statement

- U. Description of Business - EPU Well No. 8-D is used to dispose of part of the produced salt water from the East Poplar Unit wells. The salt water is separated from the produced fluid and comes to the disposal facility at SWD Station No. 1 through closed flowlines. The salt water is held in the salt water storage tanks until the salt water disposal pumps are engaged through automatic level switches. The salt water disposal pumps dispose of the salt water into the tubing of the wellbore and then into the formation.

The produced fluids are mixed in the flowlines and the resulting final TDS is approximately 130,000 TDS.

The SWD Station No. 4 operates an average of 24 hours per day.

Date
Confining
Zones



MURPHY
CONTOUR

DOMESTIC EXPLORATION
EL DORADO, ARKANSAS

East Poplar Unit
East Poplar Field
Roosevelt County, Montana
Topographic Map
Scale 1:250,000

MURPHY
OIL USA, INC.

200 PEACH STREET
EL DORADO, ARKANSAS 71730

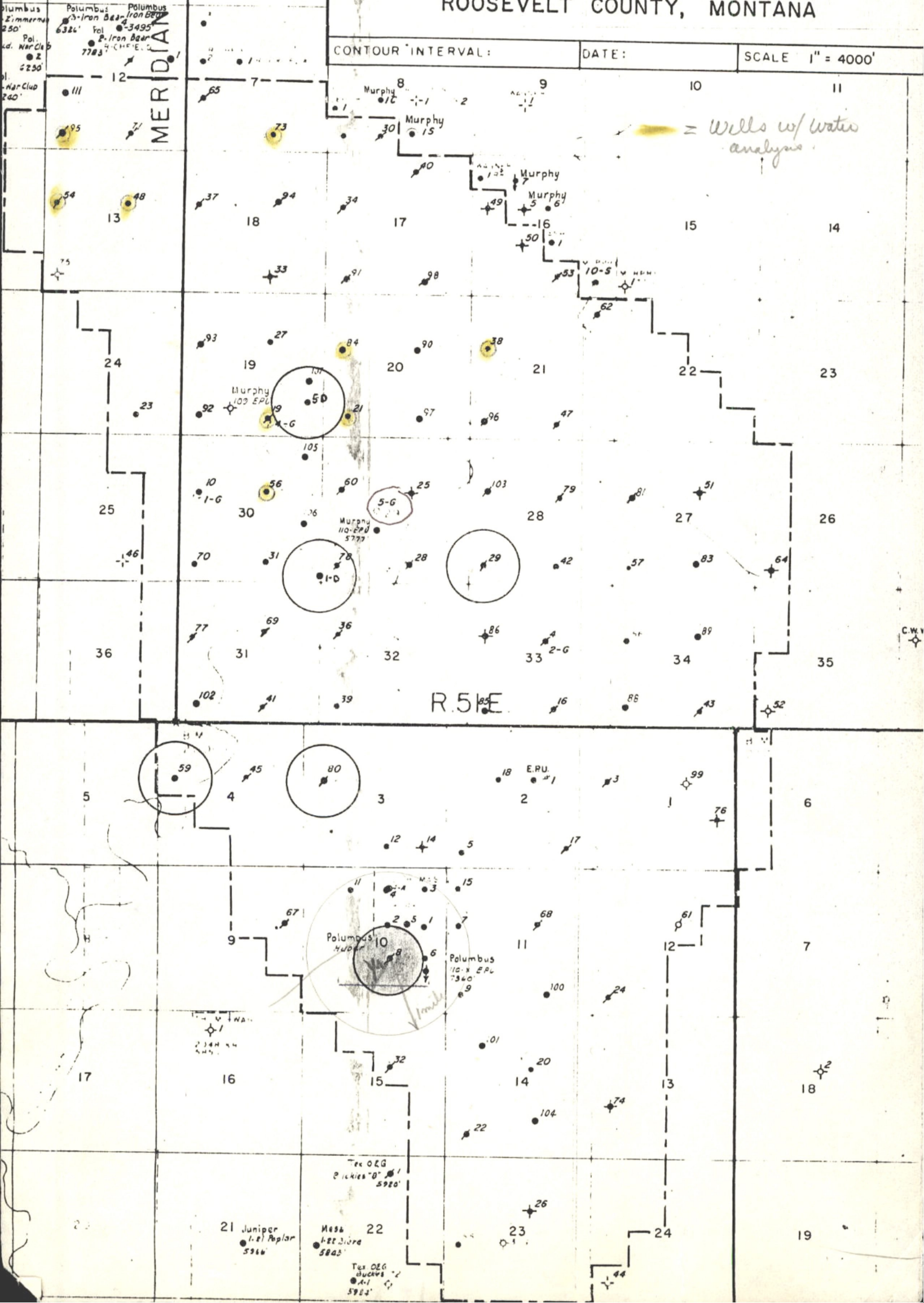
POPLAR AREA

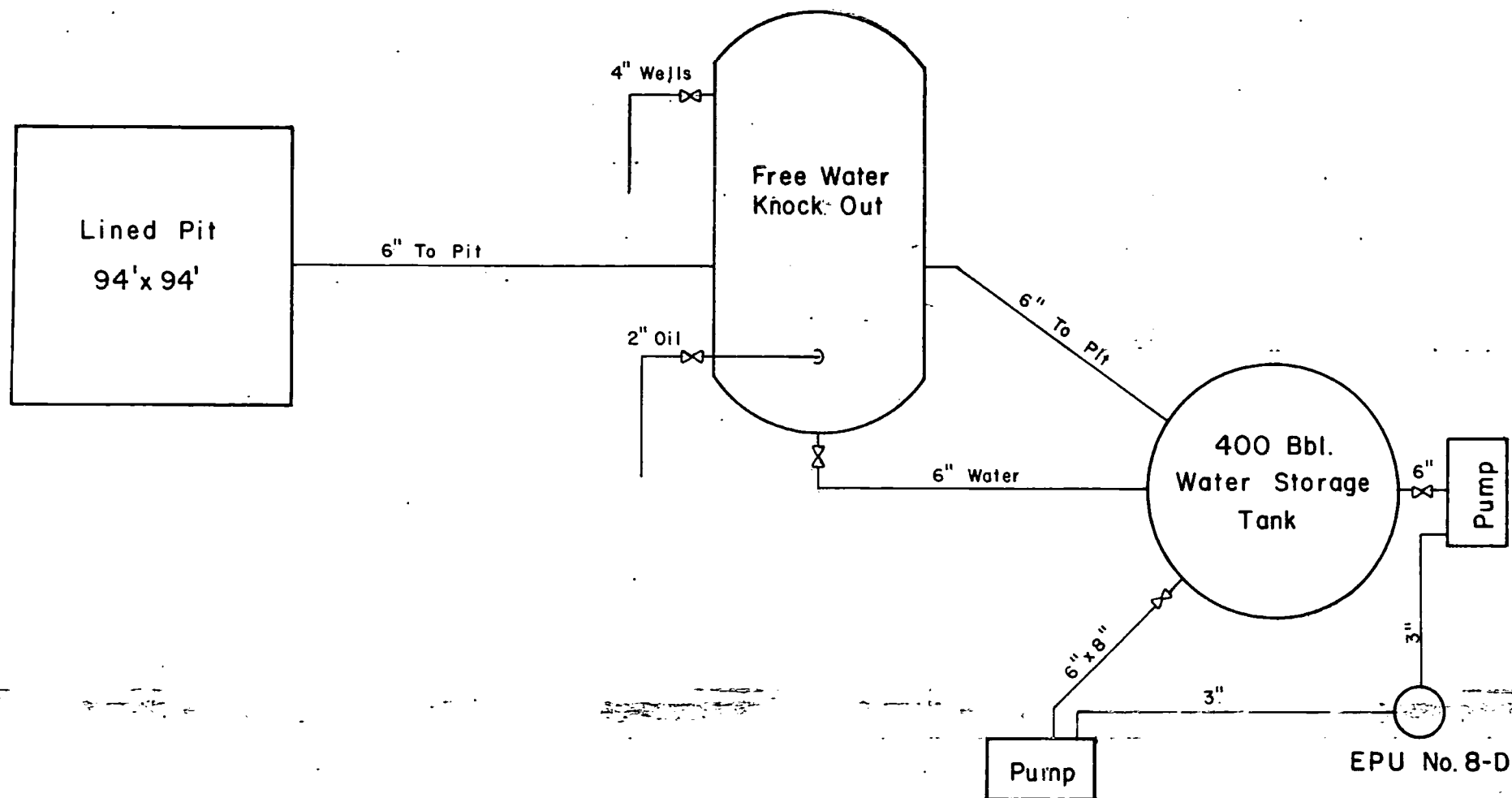
ROOSEVELT COUNTY, MONTANA

CONTOUR INTERVAL:

DATE:

SCALE 1" = 4000'





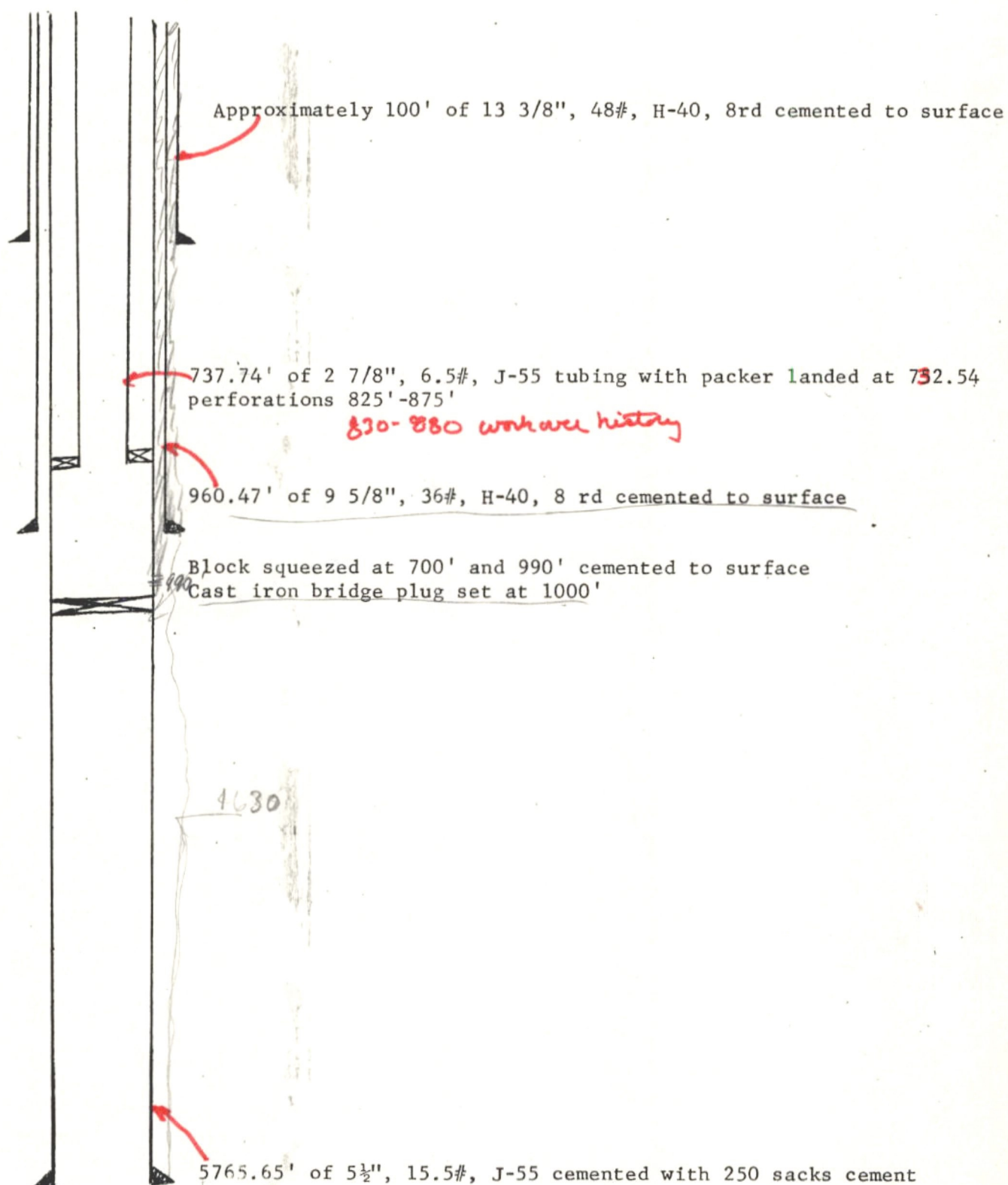
East Poplar Unit

SWD STATION NO. 4

EPU WELL NO. 8-D

NOTE: NOT TO SCALE

EPU 8-D Subsurface Well Design



Note: Design is not to scale

well
Schematic

(SUBMIT IN QUADRUPLICATE)

TO

BOARD OF OIL AND GAS CONSERVATION
OF THE STATE OF MONTANA

BILLINGS OR SHELBY

SUNDRY NOTICES AND REPORT OF WELLS

NOTICE
THIS FORM BECOMES A
PERMIT WHEN STAMPED
APPROVED BY AN AGENT
OF THE BOARD.

Notice of Intention to Drill		Subsequent Report of Water Shut-off	
Notice of Intention to Change Plans		Subsequent Report of Shooting, Acidizing, Cementing	
Notice of Intention to Test Water Shut-off		Subsequent Report of Altering Casing	
Notice of Intention to Redrill or Repair Well		Subsequent Report of Redrilling or Repair	
Notice of Intention to Shoot, Acidize, or Cement		Subsequent Report of Abandonment	
Notice of Intention to Pull or Alter Casing		Supplementary Well History	
Notice of Intention to Abandon Well		Report of Fracturing	
		Change Disposal Zone	X

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

July 21

78

Following is a ~~notice of intention to do work~~ on land ~~XXXXX~~ leased described as follows:LEASE **East Poplar Unit No. 8-D**MONTANA
(State)Roosevelt
(County)East Poplar Unit
(Field)

Well No. **8-D** **C NW SE Section 10** **T28N** **R51E** **MPM**
(m. sec.) (Township) (Range) (Meridian)

The well is located **1980** ft. from **XXX** line and **1980** ft. from **E** line of Sec. **10**
S XXX

LOCATE WELL SITE ACCURATELY ON PLAT ON BACK OF THIS FORM.

The elevation of the ground or K.B. above the sea level is **2094' RKB**

READ CAREFULLY

DETAILS OF PLAN OF WORK

READ CAREFULLY

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings, cementing points, and all other important proposed work, particularly all details of Shooting, Acidizing, Fracturing.)

DETAILS OF WORK
RESULT

Set cast iron bridge plug at 1000'. Perforate the Judith River Sand at **990-991'**.
Set cement retainer at 960'. Squeezed up around surface casing with 350 sacks
regular cement. Went in hole with bit and hit cement at 490'. Drilled down to
852'. Perforated 700' to 701'. Squeeze thru perforation with 100 sacks regular
cement with 2% calcium chloride. Clean hole out to 934'. Run Gamma Ray Neutron
Log. Perforate from 830' to 880', 4 holes per foot, 200 holes total.

Injection Pressure **630 PSI.**

Approved subject to conditions on reverse of form

Date **JUL 26 1978**
ORIGINAL SIGNED BY
By **Judson D. Sweet, Petroleum Engineer**
District Office Agent Title

Company **Murphy Oil Corporation**

ORIGINAL SIGNED BY
By **BILLY G. MELEER**
District Superintendent

Title
Address **P.O. Box 347, Poplar, Montana 59255**

BOARD USE ONLY
API WELL NUMBER

2	5								
STATE	COUNTY	WELL							

NOTE—Reports on this form to be submitted to the appropriate District for approval

WHEN USED AS PERMIT TO DRILL, PERMIT EXPIRES 90 DAYS FROM DATE OF APPROVAL IF WELL NOT SPUDDED OR EXTENSION REQUESTED.

OVER

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEYSUBMIT IN TRIPLICATE*
(Other instructions on re-
verse side)Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

Patented

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

Fort Peck (Allotted)

7. UNIT AGREEMENT NAME

East Poplar Unit

8. FARM OR LEASE NAME

East Poplar Unit

9. WELL NO.

No. 8-D

10. FIELD AND POOL, OR WILDCAT

East Poplar Unit

11. SEC., T., R., M., OR BLK. AND
SURVEY OR AREANW SE Section 10,
T28N, R51E

12. COUNTY OR PARISH 13. STATE

Roosevelt Montana

SUNDRY NOTICES AND REPORTS ON WELLS
(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED

1. OIL WELL ☐ GAS WELL ☐ OTHER ☒ Disposal Well JUL 25 19782. NAME OF OPERATOR
Murphy Oil Corporation Billings, Montana3. ADDRESS OF OPERATOR
P.O. Box 547, Poplar, Montana4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*
See also space 17 below.)
At surface

1980' from the South line and 1980' from the East line

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

2094' RKB

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF ☐FRACTURE TREAT ☐SHOOT OR ACIDIZE ☐REPAIR WELL ☐(Other) ☐PULL OR ALTER CASING ☐MULTIPLE COMPLETE ☐ABANDON* ☐CHANGE PLANS ☐

SUBSEQUENT REPORT OF:

WATER SHUT-OFF ☐FRACTURE TREATMENT ☐SHOOTING OR ACIDIZING ☐(Other) ☒ Change Disposal ZonesREPAIRING WELL ☐ALTERING CASING ☐ABANDONMENT* ☐(NOTE: Report results of multiple completion on Well
Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Set cast iron bridge plug at 1000'. Perforate the Judith River Sand at 990-991'. Set cement retainer at 960'. Squeezed up around surface casing with 350 sacks regular cement. Went in hole with bit and hit cement at 490'. Drilled down to 852'. Perforated 700' to 701'. Squeeze thru perforation with 100 sacks regular cement with 2% calcium chloride. Clean hole out to 954'. Run Gamma Ray Neutron Log. Perforate from 830' to 880', 4 holes per foot, 200 holes total.

Injection Pressure 630 PSI.

J. River hij
inj. e 830-880
630 7/21/78

U.S. GEOLOGICAL SURVEY
RECEIVED

JUL 24 1978

CASPER, WY

18. I hereby certify that the foregoing is true and correct

SIGNED

ORIGINAL SIGNED BY
BILLY J. MELEND

TITLE

District Superintendent

DATE

July 21, 1978

(This space for Federal or State office use)

APPROVED BY

Thomas P. Sullivan

DISTRICT ENGINEER

DATE

AUG 2 1978

CONDITIONS OF APPROVAL, IF ANY:



200 PEACH STREET
EL DORADO, ARKANSAS 71730

~~844-3895~~
293-1463

(501) 862-6411 - Main Number
Ext. 254 - Auto 3M 9165

Ext. 596 - confirm
Ext. 270 - Mailroom

TELECOPY COVER PAGE

DATE: April 22, 1985

TO: EPA Region 8
(COMPANY)
Denver, CO
(City, State)

TIME: _____

FROM: Sidney W. Campbell

ATTN: Michael Liuzzi

TELECOPY
NUMBER: 910-931-2215

VERIFICATION:
NUMBER: _____

PAGES 3
SENT: (Includes Cover Page)

OPERATORS
Name: Lisa

VERIFIED: _____
(Date, Time & Initials)

APR 22 PM 3:40

COMMUNICATIONS



NOTICE!
THIS FORM BECOMES A
PERMIT WHEN STAMPED
APPROVED BY AN AGENT
OF THE COMMISSION.

OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF MONTANA
BILLINGS OR SHELBY

SUNDRY NOTICES AND REPORT OF WELLS

Notice of Intention to Drill	Subsequent Report of Water Shut-off
Notice of Intention to Change Plans	Subsequent Report of Shooting, Acidizing, Cementing
Notice of Intention to Test Water Shut-off	Subsequent Report of Altering Casing
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Notice of Intention to Shoot, Acidize, or Cement	Subsequent Report of Abandonment
Notice of Intention to Pull or Alter Casing	Supplementary Well History
Notice of Intention to Abandon Well	Report of Fracturing

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

May 24, 1956

Following is a ~~subsequent report of work done~~ report of work done on land ~~owned~~ leased described as follows:

LEASE R.P.N. Klien #2194

MONTANA
(State)

Bozavalt
(County)

East Paplar
(Field)

Well No. 73 SW 34 Section 23 T2N R1E M.P.N.
(m. sec.) (Township) (Range) (Meridian)

The well is located 600 ft. from S. Section and 600 ft. from W. Eastline of Sec. 23

(Locate accurately on Plat on back of this form the well location and show lease boundary.)

The elevation of the derrick floor above the sea level is 3015' M.S.

READ CAREFULLY

DETAILS OF PLAN OF WORK

READ CAREFULLY

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work, particularly all details results Shooting, Acidizing, Fracturing.)

DETAILS OF WORK
RESULT

Spudded at 10:00 P.M., 5-18-56. Ran 5 jts. (158.88') of 12-3/8", 3rd. thd., 42, 2-40, 2-3, American casing, landed 11.25' below HKB and set at 170.13', Ran Housse guide shoe on bottom. Cemented with 200 sacks of regular cement with 2% CaCl₂. Circulated approximately 20 sacks of clean cement. Pumped plug with 500#, released pressure to 300# and shut in. Job complete at 11:41 P.M., 5-18-56.

Ran 30 jts. (977.70') of 9-5/8", 3rd. thd., 52C, American Glass "A" casing, landed 9.25' below HKB at 906.75'. Ran Housse float shoe on bottom and 1 Housse centraliser at 970'. Cemented with 400 sacks of cement with 2% CaCl₂. Ran 10 bbls. of water ahead of cement, circulated approximately 100 sacks of clean cement to surface. Pumped plug with 1000#, released pressure, float held ok. Packed off 12-3/8" casing with Morris head.

Approved subject to conditions on reverse of form for Company MURPHY CORPORATION

Date 5/24/56
By John R. Highley
District Office Agent

By Harold Milon
Title Division Production Superintendent
Address 602 Midland Bldg., Billings, Montana

NOTE:—Reports on this Form to be submitted to the District Agent for Approval in Quadruplicate.

RECEIVED

WHEN USED AS PERMIT TO DRILL, THIS EXPIRES 90 DAYS FROM DATE OF APPROVAL

MAY 25 1956

TELECOPY



200 PEACH STREET
EL DORADO, ARKANSAS 71730

April 22, 1985

Mr. Mike Liuzzi
EPA Region 8
1860 Lincoln Street
Denver, Colorado 80295-0699

EPU Permits

Dear Mr. Liuzzi:

Attached is a copy of the completion report for the EPU No. 78 well. The well has 9 5/8" Casing cemented to the surface and set at 986.95'. This will protect the Judith River and formations above.

The Tracer Survey which was run on 3-8-85 by Gearhart for the EPU No. 4-D Station is for Well No. 8-D. Sometimes the two numbers are used interchangeably by mistake.

Gearhart has been asked to furnish a written explanation of the tracer surveys. They indicate the explanations will be completed April 24, 1985. I will forward them to you at that time.

Yours very truly,

A handwritten signature in cursive script that reads "Sidney W. Campbell".

Sidney W. Campbell
Senior Petroleum Engineer

SWC/ac
Attachment



EAST POPLAR UNIT NO. 8-D

Lease and Well No.: East Poplar Unit No. 8-D
Field: East Poplar Unit County: Roosevelt State: Montana
Well Location: C NW SE Section 10, T28N, R51E

STATUS PRIOR TO PRESENT JOB:

Date Completed: September 5, 1952 Date Of Last Workover: December 10, 1965 - P.A.

T.D.: 3615' Perforations: 5630-36' and 5614-23' - A 50 sack cement plug set from 5650' to 5200'

Cumulative Production: B-1 & 2 411,424 BO 1,340,205
BW C-3 196,324 BO 171,409 BW Last Test: September 9, 1965 - Pumping at

the rate of 103 BFPD 95% W.C. 5 BOPD 98 BWPD. The C-Zone is shut in with D.R.

Plug - Watered Out.

JUSTIFICATION FOR WORKOVER:

East Poplar Unit No. 8 was P & A as being uneconomical December 10, 1965. East Poplar Unit No. 8 is to be converted into a Dakota Sand disposal well to take care of water from EPU "D", "H", "K", and "R" batteries. Production from these 4 batteries could possibly be increased, by selective workovers, 80-100 BOPD if salt water disposal facilities were available. At the present time salt water facilities are working to capacity.

SUMMARY OF WORKOVER:

10-17-72 First Report- 3200' PBTD Present Status - Preparing to pull tubing, set bridge plug on Wireline, log and perforate for squeeze.

M I P U Rigged up and picked up 2-7/8" tubing. Ran 4-3/4" bit and 5-1/2" casing scraper. Tagged cement at 3193'. Rigged up power swivel and pump. Drld. cmt. and B.P. (4 hrs. and 10 mins.). Ran bit and scraper to 3818'. Shut down due to darkness.

Compl
Report
10/22/72